

AMERICAN DENDROBATID GROUP

Newsletter No. 7

January-February 1993

The purpose of the ADG is to develop better communication between Dendrobatid breeders in North America. It is designed by its format and bi-monthly distribution to keep dendrobatid frog breeders in better communication with one another. We hope that with this communication we will be able to solve some of the problems which confront us all. This newsletter will appear bimonthly and will cost \$5.00 annually to cover printing and mailing.

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Dendrobates leucomelas - breeding experiences

Ed Oshaben

Introduction

Dendrobates leucomelas (Steindachner, 1864) occurs in northern Brazil, Venezuela, Guyana, and adjacent Surinam at altitudes between 50 and 800 m. It is easily recognized by its black background color with broad yellow to orange crossbands with black spots and irregular areas in the yellow areas.

In December, 1989 I acquired 2.1 adult frogs which were proven breeders. They were temporarily housed in a standard ten-gallon terrarium heavily planted with pothos and tillandsia's. Approximately six weeks later permanent quarters were completed. They consisted of an all glass tank 24"wx20"hx16"d. A false bottom was siliconed in place which slanted toward the front at an angle of 15° (fig. 1) ending in a well 24"wx3"hx1.5"d. The rear wall was covered with a flattened piece of oak bark up to an angled glass shelf about four inches from the top of the tank. This shelf was filled with small pebbles and potting soil and planted with various vining plants such as Wandering Jew's. Coiled and convoluted sections of one to two inches diameter wild grape vine were cut to fit into the tank. These added a large amount of usable area on which various *Tillandsia* were placed.

The substrate consisted of a mixture of dried sphagnum moss and orchid bark to a depth of one-half to one inch. Potted plants of peperomia and Dracena were strategically placed behind the lower parts of the grape vines. Two petri dishes, onto which plastic leaves had been hot glued, were placed, one on either side of the tank. They were covered with 1/2 coconut shells with entrances cut into them. Rocks and wood pieces were added throughout to provide climbing spaces.

A wooden top was constructed which contains a 30 watt spotlight wired to a dimmer switch and two 24" Gro-Lux® fluorescent bulbs. Four one inch holes were drilled, two front

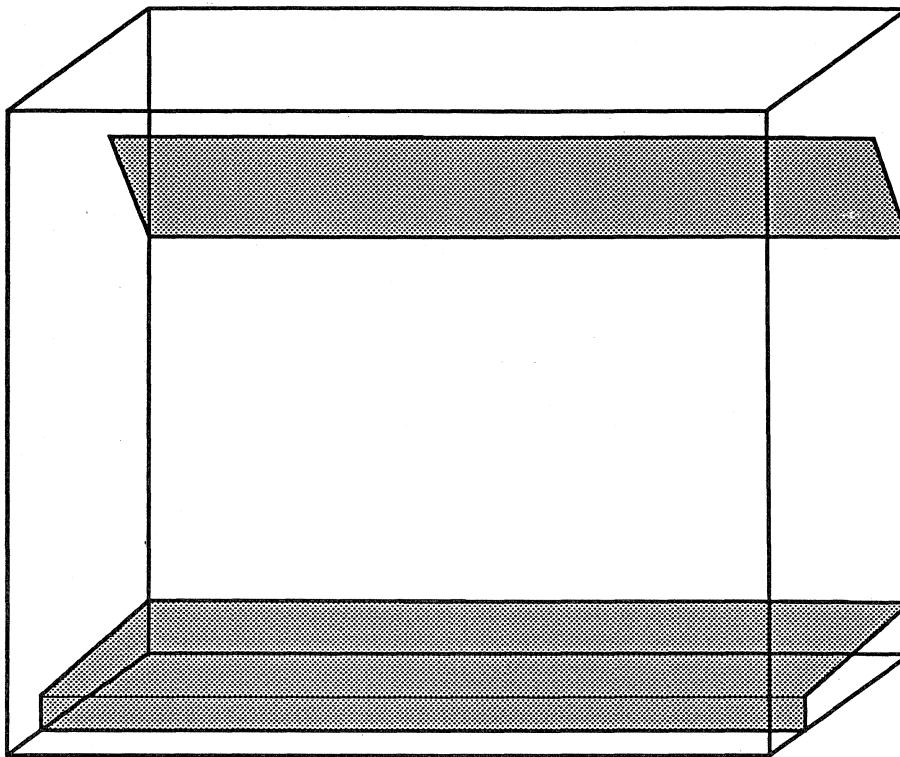


Figure 1. Design of tank for keeping *Dendrobates leucomelas*.

and two back, and window screening covered the bottom of the light box.

During the six weeks the frogs were in their temporary quarters calling was not observed, but within an hour of introduction to their new home calling was heard. One week later the first clutch of eggs was deposited in one of the covered petri dishes. Five additional clutches were laid at periods between 12 and 16 days, alternating between the two petri dishes. Clutch size averaged 5 with 4 the smallest and 6 the largest. Eggs were left in the tank until hatching and then removed to a brooder.

During the 1990 season 28 eggs were laid, 24 of these were fertile. Twenty-one tadpoles hatched, all of which completed metamorphosis, unfortunately 11 of the 21 were afflicted with spindle leg syndrome (sls). The 1991 breeding season proved to be much more fruitful. Eighteen clutches were deposited, containing 92 eggs. Of these 84 were fertile and 76 hatched, 71 completed metamorphosis with no sls. I attribute the elimination of sls to a supplementation regime of Nekton-Rep® and Nekton-Msa® three times a week and alternating supplements. Fruitflies comprised the bulk of the diet with pinhead crickets being used only occasionally.

Brooder

I must give credit for the idea for this brooder to Erik Wevers (Holland) as he described one similar to mine at the IHS #13 held in Phoenix, Arizona in June of 1989. Mine is built entirely of glass and is approximately 42"wx16"hx9"d (fig. 2). A piece of glass was

fitted in the tank four inches above and parallel to the bottom and leaving about 4 inches open on either end. A second piece (A in Fig. 2) was cut to extend vertically from one end of the first piece, this piece was siliconed in place on all three sides. Pieces B thru H (Fig 2) were cut to the same size as piece A minus one inch in height and siliconed into place on only the vertical ends leaving a gap under each piece of about 1.5 mm. This gap allows water, waste and excess food to pass to the next chamber and eventually out of the brooder. During the first season that I used this brooder, I filled the lower chamber with filter floss and activated charcoal which seemed to work well, although cleaning this lower area proved to be very difficult. The second season I changed my filtration system to a combination of scavenger fish and foam element biological filters and this works very well. The first chamber, formed by parts A and B, was filled with activated charcoal in a nylon bag. I obtained some corydora cat fish from a tank that I knew was disease free and had been set up for about 6 months. I tried keeping some aquarium plants in this chamber but they did not survive long and only seemed to add to the waste in the tank. Water was pumped from the lower to upper chamber, over piece A, using a power filter head, with the flow adjusted by adapting a PVC spigot to the output of the pump. The output of the pump was adjusted so that it input of water equals the amount of water exiting under piece H. If too much water is pumped into the upper chambers they will overflow into each other setting up a stair-step effect with the water high where it enters the system and low at the exiting end. A submersible aquarium heater and a large air stone were placed in the lower chamber, and temperature maintained at 75°F.

The brood chamber created by pieces B thru H were subdivided into 4 to 6 cubicles, as needed, using glass panes which were equal in height to pieces B thru H and which fit snugly between them. These were not permanently attached, but held in place using plastic

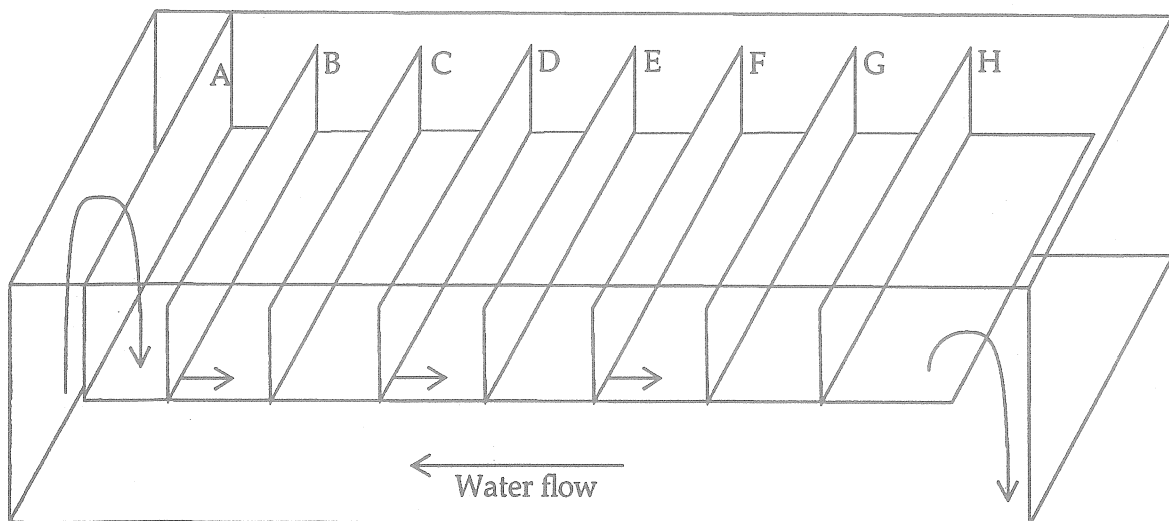


Figure 2. Design of glass tadpole brooder described in text.

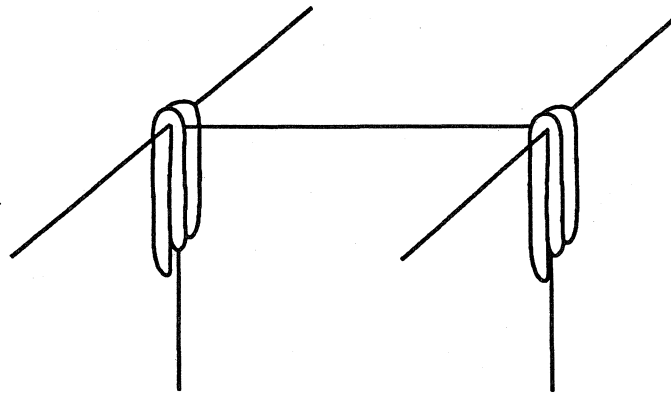


Figure 3. Close-up of glass dividers used in tadpole brooder in figure 2.

clips used by the clothing manufacturing industry to hold trouser fronts together for display (Fig. 3). Placing two clips side by side over pieces B thru J crates a channel into which a glass divider can be placed (Fig. 4). These cubicals are fully adjustable and removable for ease of cleaning. When placing tadpoles into the brooder, begin at the end where the water exits the brooder since the movement of the tadpoles facilitates the passage of waste to the next chamber. Unoccupied cubicals at the end of the brooder tend to accumulate wastes. Auxillary lighting does not seem to be necessary and causes excessive algae buildup.

Tadpoles were fed a diet of TetraMarin® which had been pulverized, since food given in flake form tended to clog the system. The surface of the water was sprayed prior to feeding to sink any uneaten food from the previous day. This spray also eliminated the build-up of an oily film which otherwise would form.

Conclusions

Ammonia levels were monitored but never rose above acceptable limits. Water was topped of as needed and a 20% water change was done monthly. The water supply I use is softened well water, although midway through the 1991 season I changed to spring water because of a change in residence. Tadpoles of *D. tinctorius* and *D. auratus* were housed in the brooder at the same time as *D. leucomelas* tadpoles with no adverse effects. Fungal infections never arose within the brooder although the 5 *D. leucomelas* tadpoles which did not make it to metamorphosis died of an undiagnosed malady which ruptured the gut of the tadpole during its first week of life. Fortunately it did not spread to other brooder occupants.

When the tadpoles front legs broke through they were transfered to a plastic shoe box which was set at a slight angle. The water level at the low end was kept at about 1/2 inch and the high end was dry. No gravel or other substrate was used in this box and the metamorphosing froglets were not fed during this period. As their tails were reabsorbed they were transfered to a small terrarium with a moss floor and pothos. A tight fitting glass top covered the tank to maintain high humidity but a water dish was not provided, so as to eliminate the possibility of drowning. Newly emerged froglets begin feeding on fruit flies within a day or two and vitamin and mineral supplementation is the same as used for

the adults. The young grow quickly when fed adequately and reach one-half adult size in about 6 months. *Dendrobates leucomelas* are generally a rather rotund frog, more so than *D. auratus* and *D. tinctorius*. Their ample size, beautiful color, bold demeanor, musical canary-like call and hardiness make them an ideal terrarium animal.

Dues are Due

Please send \$5.00 for the 1993 calander year of the ADG Newsletter to either Newsletter editor (addresses above) for continued subscription. This will be your last issue until your membership fee is paid.

Book announcement

An English version of volume 1 of "Dendrobatidae Nederland" the Dutch Dendrobate Journal is now available fro \$15 (cash) sent to Marcel van der Weijden (De Veste 16-91, 8231 JH, Lelystad, Netherlands).

Want Adds: For Sale

<i>Dendrobates truncatus</i>	\$50	Terry Chatterton 8007 Ridge Road Arvada, CO 80002
<i>Dendrobates auratus</i> 'Costa Rica'	\$25	Sean Healy 3140 Savage Rd. Sarasota, FL 34231
<i>Dendrobates auratus</i> 'Costa Rica'		Ed Oshaben 4154 Lincoln Ave.. Willoughby, Ohio 44094-6035

The Serpent's Egg (1809 Irving St., NW, Washington, D.C. 20010) has various *Dendrobates pumilio* and *D. auratus* for sale. Write or call for information.

New Members

Bob and Val Davies (England)
Max Hernandex (California)
Sean Eric Maclipsey (California)
Malcolm Peaker (Scotland)
Douglas Potter (Sweden)

New Literature

Daly, John W., Brown, George B., Mensah-Dwumah, Monica, and Myers, Charles W., 1978, Classification of skin alkaloids from Neotropical poison-dart frogs (Dendrobatidae). *Toxicon*, 16: 163-188.

New Literature (continue)

- Daly, John W., Myers, Charles W., and Whittaker, Noel, 1987, Further classification of skin alkaloids from Neotropical poison frogs (Dendrobatidae), with a general survey of toxic/noxious substances in the Amphibia. *Toxicon*, 25(10): 1023-1095.
- Meede, Von Ute, 1980, *Phyllobates trivittatus*, ein Fäberfrosch mit vielfältiger Zeichnung. *Die Aquarien- und Terrarien Zeitschrift*, 33(4): 140-141.
- Neuwirth, Maria, Daly, John W., Myers, Charles W., and Tice, Lois W., 1979, Morphology of the granular secretory glands in skin of poison-dart frogs (Dendrobatidae). *Tissue & Cells*, 11(4): 755-771.
- van Wijngaarden, René and Bolaños, Federico 1992, Parental care in *Dendrobates granuliferus* (Anura: Dendrobatidae), with a description of the tadpole. *Journal of Herpetology*, 26(1): 102-105.
- Weygolt, P., 1983, Durch Nachzucht erhalten: Blattsteigerfrösche. Drei Arten aus der *Phyllobates pictus*-Gruppe. *Aquarien Magazin*, 11: 566-572.